

ABSTRACT OF THE DISCLOSURE

A method of fabricating a semiconductor device capable of obtaining a high-density laser beam necessary for crystallizing a semiconductor layer or activating an impurity while miniaturizing a lens group provided on the outlet of an optical fiber member is provided. This method of fabricating a semiconductor device comprises steps of connecting a laser oscillator oscillating a near infrared laser beam and an irradiation optical system with each other through an optical fiber member having a single core part and heating a semiconductor layer by irradiating the near infrared laser beam from the irradiation optical system.